# TANK CLOSURE SUMMARY

**Site Information**

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| Site Name | UST Site 116 (Former UST-116) |
| Site Address | Approximately 10 feet east of Building 116 at Naval Air Facility (NAF) El Centro, CA. |
| Responsible Party Name: | Robert Fischer, Environmental Protection Specialist |
| Responsible Party Phone: | (760) 339-2284 |
| Responsible Party Address: | 1605 Third Street, Building 504, Code 45E, NAF El Centro, CA 92243-5001 |
| Current Land Use: | Active military base |
| RWQCB File Number: | 7DODT22430001 |

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|---|---|
| Date spill/leak reported to regulatory agency: | 1989 (estimated) |
| Estimated date discharge/leak was discovered: | 1989 |
| How discharge/leak was discovered: | Tank removal in 1989 |
| Cause of discharge/leak: | Leaking UST |
| Start date for active remediation: | 1995 |
| Completion date for active remediation: | 1995 |

| | Easting | Northing |
|---|---|---|
| Coordinates for tank: | 6738782.50000 | 1878872.00000 |

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| Dates for sample analysis: | |
| Soil: | May 1990, April 1993, Nov. 1995, Jan./Feb. 1999 |
| Groundwater: | Oct. 1992, Jan. 1999, and Jan. 2001 through Jan. 2004 |

**Site Characterization Information**

***Description of the former UST:***
Former UST 116 was a 260-gallon steel tank used to store diesel fuel. It was installed in 1942 near the eastern exterior of Building 116 and was removed in 1989 (see attached Figure 5-1, BEI 2005). Impacts to soil were first identified during the UST removal in 1989.

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| ***Contaminants Identified:*** | See attached tables of analytical results |
| ***Amount of Contaminants Leaked:*** | Not estimated |
| ***MTBE:*** | Not reported in groundwater or soil |
| ***Description of the soil/geology:*** | Subsurface geology consists predominantly of clays, silts, sands, and sand-silt-clay mixtures. |

***Is soil contamination completely delineated (to what levels)?***
Yes, the extent of total petroleum hydrocarbon (TPH)-impacted soil was delineated (at concentrations greater than or equal to 100 milligrams per kilogram [mg/kg]) during a 1993 site assessment (see attached figure; JEG, 1993).

***Estimated volume of contaminated soil left on site and concentration:***
Contaminated soil was excavated to the extent practicable in 1995, but was limited by the presence of utilities and Building 116 (OHM 1995). A total of approximately 1,010 cubic yards ($yd^3$) of soil were excavated, and approximately 360 $yd^3$ of contaminated soil were treated. The maximum concentrations of TPH as diesel (TPH-d) and as gasoline (TPH-g) reported in confirmation soil samples were 1,100 and 760 mg/kg, respectively, in soil sample 116-6,P,11.5; which was collected on the northwest side of Building 116. The quantity of contaminated soil remaining beneath Building 116 was not estimated. See attached figures and tables of analytical results.

***Is groundwater contamination completely delineated?***

Groundwater contamination was delineated in 1990 (Boogay 1990); in 1993 during a site assessment (JEG 1993); in 2000 during a UST Site Investigation (BNI 2000); and in 2001 to further evaluate groundwater conditions at the site (BNI 2001); see attached tables of analytical results and figures. Four monitoring wells 116-MW2 to 116-MW5 currently exist at the site; monitoring well 116-MW2 was installed in the area of maximum hydrocarbon contamination, approximately 40 feet downgradient from former UST 116 (JEG 1993).

Monitoring results obtained during 2002, 2003, and 2004, indicate that benzene and 1,2-dichloroethane (1,2-DCA) were the only chemicals of concern (COCs) reported in groundwater at concentrations exceeding respective cleanup goals (see attached figures and tables of analytical results, BEI 2005). Other COCs reported in groundwater at UST Site 116 include TPH-g, TPH-d, and ethylbenzene. Concentrations of benzene, TPH-g, TPH-d, and ethylbenzene have decreased markedly since 1999. Maximum concentrations of all COCs have been reported in well 116-MW2; reported concentrations of benzene in this well have decreased from a maximum of 3,200 µg/L in 1999 to 3.5 µg/L in 2004. Concentrations of TPH-d decreased from a maximum of 88,300 µg/L in 1992 to 2,200 µg/L in 2004. Concentrations of TPH-g decreased from a maximum of 11,000 µg/L in 1999 to 1,400 µg/L in 2004. 1,2-DCA was reported in two of five samples at concentrations of 11 and 10 µg/L in April 2003 and January 2004, respectively.

No COCs have been reported in any groundwater samples from downgradient monitoring well 116-MW5 since 1991; this well is located approximately 120 feet downgradient from former UST 116. In addition, no COCs have been reported in groundwater samples from downgradient well 116-MW4 at concentrations exceeding cleanup goals since June 2001; this well is located approximately 240 feet downgradient from former UST 116.

Monitoring results indicate there has been little downgradient migration of COCs from the source area at former UST 116 since monitoring was initiated in 1992, and concentrations of COCs display marked decreasing (benzene and ethylbenzene) or stable (1,2-DCA) concentration trends. Decreasing concentration trends are anticipated to continue in the vicinity of source area well 116-MW2 as a result of natural attenuation processes.

***Monitoring wells installed, properly permitted?***

Yes, four groundwater monitoring wells (designated 116-MW2 through 116-MW5) were installed at the site (see attached Figure 5-1 for well locations).

***Depth to groundwater:***
Approximately 13 feet below ground surface

***Remedial action taken?***
Yes, UST 116 was removed in September 1989. Contaminated groundwater was extracted for treatment or disposal, and contaminated soil was excavated to the extent practicable in 1995 (see attached figure and tables; OHM 1995). The extent of soil removal was restricted by the presence of Building 116 and subsurface utilities.

**Closure**

***Does complete corrective action protect beneficial uses per the RWQCB Basin Plan?***
Yes.

***Remedial action taken?***
UST 116 was removed in September 1989. Contaminated groundwater was extracted and petroleum-impacted soil has been excavated to the extent practicable. Results of groundwater monitoring since 1992 indicate significant decreasing COC concentration trends, suggesting that natural attenuation is occurring (see attached Table 5-1, BEI 2005).

***Site Closure:***
Impacted soil has been excavated to the extent practicable; the soil was treated and used as backfill material. Based on groundwater monitoring results obtained during 2002, 2003, and 2004; benzene and 1,2-DCA are the only two COCs reported in groundwater at concentrations slightly exceeding respective cleanup goals; COCs are not migrating downgradient; and COC concentrations appear to be decreasing due to natural attenuation.

It is recognized that groundwater located beneath NAF El Centro is generally of poor quality due low aquifer yields and high concentrations of total dissolved solids, and is therefore not designated as a potential source of drinking water (RWQCB 2003).

Based on the above information, groundwater monitoring may be discontinued at UST Site 116, and the four groundwater monitoring wells at the site shall be destroyed in accordance with applicable local, state, and federal law. The recommendation for site closure is accepted and no further action is required.

Signature_____ _____
Date

N.R. Wells
Lieutenant Commander, CEC, US Navy
By Direction of
The Commanding Officer

Signature Daniel Vugrinovich FOR 6/26/06
Date

Liann P. Chavez, P.G.
Senior Engineering Geologist
California Environmental Protection Agency
California Regional Water Quality Control
Board Colorado River Basin Region

Signature _____ Date

Kimberly A. Counts-Lineses
Environmental Installation Program Director
By Direction of
The Commanding Officer

## REFERENCES

Bechtel Environmental, Inc. 2005. Draft Annual Groundwater Monitoring Report for Petroleum-Only Sites, Naval Air Facility El Centro, El Centro, California. July.

Bechtel National, Inc. 2000. Final Technical Memorandum, UST Site Investigation, Naval Air Facility El Centro, El Centro, California. March.

Bechtel National, Inc. 2001. Annual Groundwater Monitoring Report 2001 for Petroleum-Only Sites, Naval Air Facility El Centro, El Centro, California. November.

BEI. *See* Bechtel Environmental, Inc.

Boogay, Marc A. 1990. Underground Storage Tank Investigation, Building No. 116, NAF El Centro. 07 May, with amendments made 27 August.

California Regional Water Quality Control Board, Colorado River Basin – Region 7. 2003. Letter addressed to Mr. James Hoyle, Remedial Project Manager, Southwest Division (Code 5DEN.JH), 1220 Pacific Highway, San Diego, CA, RE: Request for ARARs for an RI/FS at IR Site 2, Naval Air Facility, El Centro. 24 January.

Jacobs Engineering Group, Inc. 1993. UST Site Assessment at Buildings 116, 533, and 539, Site Assessment Report. Naval Air Facility, El Centro, California. 21 April

JEG. *See* Jacobs Engineering Group, Inc.

OHM Remediation Services Corp. 1995. Draft Site Closeout Report, Volume 1, Former UST Sites Soil Removal. Naval Air Facility, El Centro, California. November.

RWQCB. *See* California Regional Water Quality Control Board.